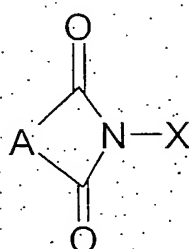


Claims:

1. A process for preparing a hydroperoxide from its corresponding hydrocarbon which comprises conducting oxidation of said hydrocarbon with an oxygen-containing gas in a reaction mixture containing said hydrocarbon and a catalyst comprising a cyclic imide compound and an alkaline metal compound.
2. Process according to claim 1 wherein the said cyclic imide compound is the compound of formula (1)



(1)

wherein

X is an oxyl radical or a -O-R₁ group, wherein R₁ is selected from the group consisting of: hydrogen; halogen; hydroxyl; C₁-C₆ alkyl; C₆-C₁₈ aryl; C₃-C₂₀ cycloalkyl; C₁-C₂₀ alkoxy; -CO-R₂, wherein R₂ is a C₁-C₂₀ hydrocarbonyl group; -O-CO-R₃, wherein R₃ is a C₁-C₂₀ hydrocarbonyl group or a carboxyl group; or -CO-O-R₂, wherein R₂ is a C₁-C₂₀ hydrocarbonyl group;

A is -CR₄=CR₅- or -CR₄-CR₅-, wherein:

- (i) R4 and R5 are independently selected from the group consisting of: hydrogen; halogen; hydroxyl; C₁-C₆ alkyl; C₆-C₁₈ aryl; C₃-C₂₀ cycloalkyl; C₁-C₂₀ alkoxy; -CO-R₂, wherein R₂ is a C₁-C₂₀ hydrocarbonyl group; -O-CO-R₃, wherein R₃ is a C₁-C₂₀ hydrocarbonyl group or a carboxyl group; or -CO-O-R₂, wherein R₂ is a C₁-C₂₀ hydrocarbonyl group; or
- (ii) R4 and R5 taken together with the carbon atoms to which they are joined form a cyclic group, said cyclic group containing 1 to 8 rings, either fused or linked, said rings being aromatic rings or non-aromatic rings, each ring having 3 to 18 members selected from the group consisting of carbon atoms and heteroatoms, and being optionally substituted with one or more substituents selected from the group consisting of nitro; phosphine group; phosphonium group; halogen; hydroxyl; C₁-C₆ alkyl; C₆-C₁₈ aryl; C₃-C₂₀ cycloalkyl; or C₁-C₂₀ alkoxy.
3. Process according to claim 1 wherein said cyclic imide of formula (1) is selected from the group consisting of N-hydroxyphthalimide, N-hydroxynaphthalimide, N-hydroxymaleimide, N-hydroxysuccinimide, and mixtures thereof.
4. Process according to claim 1, wherein the amount of said cyclic imide in the reaction mixture ranges from 0.0001 to 1% wt, preferably from 0.001 to 0.5% wt.
5. Process according to claim 1, wherein said alkaline metal is selected from the group formed by lithium, sodium, potassium and cesium.

6. Process according to claim 1, wherein said alkaline metal compound is selected from the group consisting of oxides, organic acid salts, inorganic acid salts, halides, alkoxides, oxoacids and their salts, isopolyacids and their salts, heteropolyacids and their salts, and mixtures thereof.
- 5 7. Process according to claim 1, wherein the amount of said alkaline metal compound in the reaction mixture ranges from 0.000005 to 0.01% wt, preferably from 0.00001 to 0.005% wt.
8. Process according to claim 1, wherein the hydrocarbon is selected from the group comprising tertiary alkanes C₄-C₂₀, C₇-C₂₀ (alkyl) aromatic hydrocarbons with 1 to 6 aromatic rings, C₉-C₂₀ (cycloalkyl) aromatic hydrocarbons with 1 to 6 aromatic rings, and mixtures thereof.
- 10 9. Process according to claim 8, wherein the hydrocarbon is ethylbenzene.